ABSTRACT

The object of the present invention is to provide the following: a method for preparing a basement membrane which is extracellular matrices having a function to control morphology, differentiation, proliferation, motility, function expression and the like of cells; a method for constructing a specimen of a basement membrane; a process for producing a reconstituted artificial tissue; a basement membrane specimen or an artificial tissue which can be transplanted while maintaining the structure of a basement membrane. A basement membrane having a barrier function is formed by culturing alveolar epithelial cells or vascular endothelial cells on a fibrous collagen matrix coated with a polymer having a sugar chain which can localize a receptor having an activity to accumulate a basement membrane component on the basal surface of the cells having an ability to form a basement membrane. A reconstructed artificial tissue is obtained by seeding and culturing desired homogeneous or heterogeneous cells having an ability to form a basement membrane on the basement membrane specimen constructed by the following process: the cells having an ability to form a basement membrane adhered onto a support structure through a basement membrane are treated with a surface active agent; the lipid component of cells is lysed; the mixture of an alkaline solution and a protease inhibitor is used to lyse the protein remained on the surface of the basement membrane of the cells. A protein support structure is temporarily adhered to plastic surface through an adsorptive polymer by hydrophobic bonding, such as an alternating copolymer of methyl vinyl ether and maleic anhydride, which has a hydrophobic linear carbon skeleton and a functional group which can react with protein in a molecule and a basement membrane specimen or an artificial tissue is formed thereon,

then the protein support structure supporting a basement membrane specimen or an artificial tissue is physically exfoliated from plastic surface when desired.